

STAR Software Infrastructure

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Subsystem summary

The software infrastructure in STAR generally provides the interface between the physicists doing data analysis and the off-line computing facilities. The key components of this are, the analysis framework, the software library, data management tools, WWW based documentation, and the off-line production system.

The analysis framework provides an encapsulation for data analysis algorithms permitting the integration of components provided by many physicists with those components which provide the rest of the computing environment, i.e., data access, user interface, control logic, etc.

The software library provides an organization of and facility for source code management, make procedures for building programs, third part software libraries and tools, and software distribution via AFS.

The data management tools provide facilities for browsing (viewing) data, cataloging data for existence and location, as well as storage and retrieval from an archive.

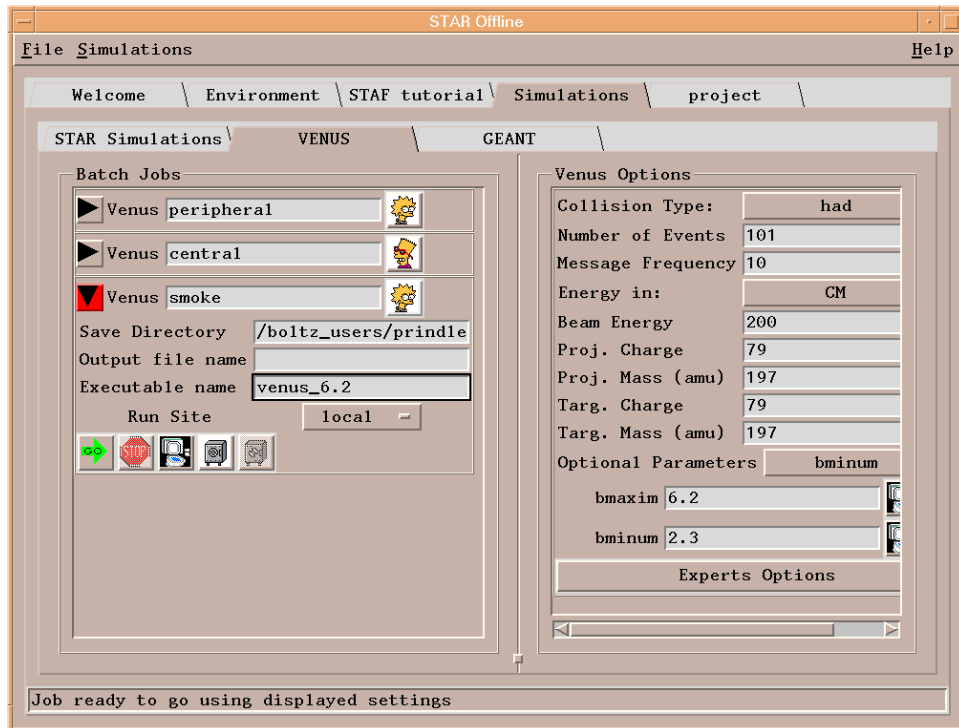
The WWW based documentation provides the document organization and distribution mechanism for all of the collaboration public documents. It is highly integrated into the software library and program development procedures. In the future it will be providing browsing and monitoring information for data as well as on-line and off-line operations.

The off-line production system provides the functionality of controlling and monitoring the work flow as STAR data is processed through calibrations, event reconstruction, and physics analyses.

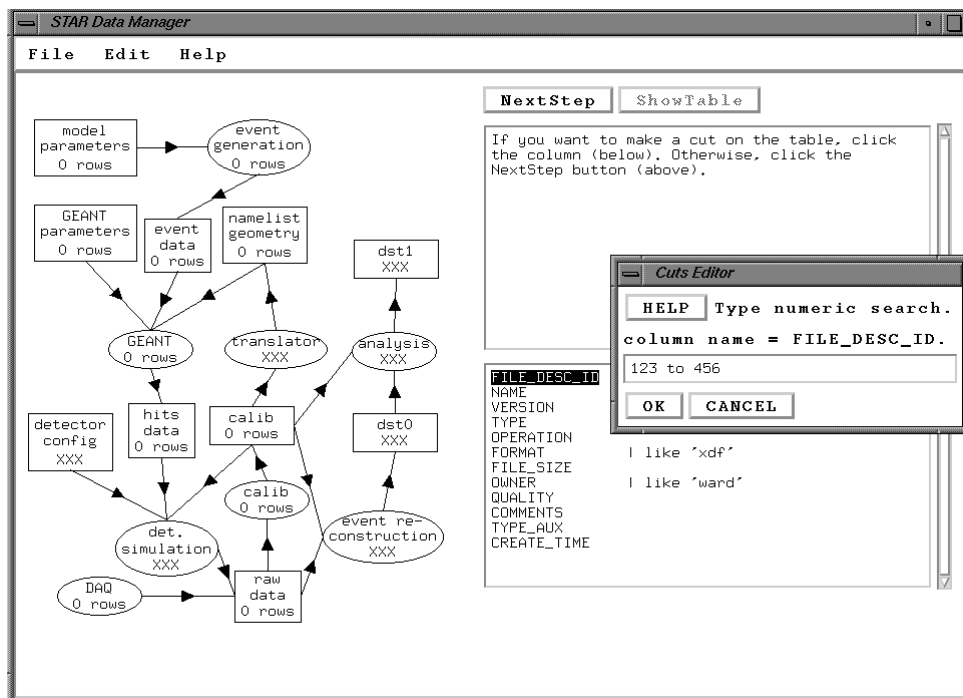
FY96 status

The major accomplishment for software infrastructure in FY96 was the release of the new STAR analysis framework called STAF. This framework, developed in C++ and following an interface standard for component software (CORBA) was released to the collaboration during the summer and process of moving the pre-existing simulation and analysis software into the new framework is nearly complete. Other important accomplishments and activities during FY96 are:

- Two production level releases of the infrastructure software (sys) in the library (SL96a, SL96b). Building tagged releases of the STAR software is an integral part of having robust and reproducible software.
- Integration and use of the dataset (dsl) library software and STAF in the system test setup. The acquisition system wrote dsl-format data which was read into STAF-based analysis of the first cosmic ray tracks through a TPC sector.
- An x-window interface for the data file manager, see figure on next page.
- Prototyping a new off-line user interface based on Tcl/Tk called the STAR Off-line Notebook. This will provide a graphic interface to the available set of programs and off-line activities. This interface should permit more reliable usage of the off-line software as well as enabling non-experts to play a significant role in the simulations and data analysis activities.
- Improvements and maintenance of the WWW tree. The web continues to be an increasingly important part of the collaboration resources and numerous modifications have been made to improve usability and functionality.
- Improvements and maintenance of the software library. The source code library and procedures also continue to receive improvements for usability and functionality. One recent addition was an update of the STAR coding style manual and the installation of a tool that will check source code for adherence to the style policies.



Screen view of STAR Offline Notebook. Clicking on the "notebook" tabs selects a particular activity or program. This picture shows the panels for the Venus event generator. Frequently changed parameters are listed in the right panel. Parameters requiring expert knowledge are available by clicking on the "Expert Options" button.



Screen view of the STAR Data File Manager. The left panel shows a high-level view of the STAR data flow and is used to select major categories of data. The top right panel displays messages and results of queries. The bottom right panel is used for building displaying fields available for query and accepting input values for the query.